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Assigning Monetary Values to Unpaid Work in Slovakia

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Abstract

The article deals with unpaid work in Slovakia. Input-based approaches are used to assign a monetary value to unpaid work activities in Slovakia using the data from 2012 nation – wide survey conducted by the Faculty of Economics, Matej Bel University, Slovakia. This nation-wide survey contains representative data about 13 individual unpaid work activities based on Eurostat methodology. In this paper after taking into account the specific conditions of Slovakia, two input-based market replacement cost approaches, namely generalist and specialist are applied to calculate the monetary value of unpaid work. The results show that, depending on the chosen wage concept and activities, the monetary value of unpaid work ranges from approximately 18 % to 25 % of GDP in Slovakia. The paper concludes that in comparison with the other traditionally market economies the value is lower due to lower level of wages of corresponding market substitutes.

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Keywords: unpaid work; monetary value of unpaid work; input-based methods

1. Introduction

Every person carries out daily number of activities. The activities can be categorized into three groups, those that are considered to be paid work, unpaid work, and no work (Antonopoulos, 2009). The first two categories can also be denoted as productive activities. Productive activities are „all activities falling within the general production

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boundary, that is, any human controlled activity resulting in an output capable of being exchanged“ (ILO, 2008, p. 11). Productive activities are those that can be associated with the concept of “work”.

The term “work” has numerous interpretations and meanings depending on the context. In a general sense, work has been defined as “any conscious, purposeful activity which with satisfaction serves the material and spiritual needs of the individual and community” (Anderson, 1961, quoted in UN, 2004, p. 181). The area of the paid work is subject of many studies in various fields ranging from labour economics, management, sociology, psychology etc. Its amount is accurately measured within the system of national accounting. Despite the fact that there are researches who are dedicated to the examination of the area of unpaid work, generally, in comparison with the area of paid work, the significance of unpaid domestic work is often forgotten and its contribution to the general wellbeing underestimated. Our paper focuses on the issue of unpaid work in Slovakia to complete an image of world of work.

Determining what activities should be classified as being unpaid work is difficult and disputable. A widely accepted principle for determining the scope of total unpaid work is the “third person/party” or “market replacement” criterion. According to Reid, 1934 (quoted in Goldschmidt-Clermont 1982, p. 4): “Household production consists of those unpaid activities which are carried on, by and for the members, which activities might be replaced by market goods or paid services, if circumstances such as income, market conditions and personal inclinations permit the service being delegated to someone outside the household group.” In this paper we follow the definition of Hirway (2015, p. 2): „Unpaid work is essentially that work which does not receive direct remuneration.“ In relation to national accounting, unpaid work could be divided into two broad groups:

- unpaid work that falls within the production boundary of the System of National Accounts (SNA), which can also be referred to as the non-market economic production (ILO, 2008, p. 11), or “economic work”, or SNA production activities
- unpaid work that falls outside the production boundary (non-SNA) which can also be referred to as the non-economic production (non-SNA production activities). This consists of unpaid household services and volunteering and community services.

There is a variety of methods and procedures to measure the value of unpaid work in economies around the world. In most cases, the source of information about the amount and structure of unpaid work is statistical Time Use Survey (TUS). In Slovakia, in 2005 the implementation of the pilot project was prepared using the Time Use Survey (TUS) methodology provided by Eurostat. The pilot project was implemented in 2006 and it included only 200 private households in the survey. The project ended in November 2006 and further surveys were cancelled.

Some research about volume of unpaid work in Slovakia can be found in works of Bútorová et al. (2008). The other data about unpaid work in Slovakia can be also found in The Second and The Third European Quality of Life Survey done in 2007 (for more details look at McCloughan, P. et al. 2011; Eurofound, 2012). But it is important to say, that the primary aim of all of these above mentioned research was not the examination of unpaid work. All the previous mentioned facts leads to necessity of the new research which should bring detailed information about the unpaid work. The issue is dealt with a primary surveys through questionnaires within the research projects conducted at the Faculty of Economics, Matej Bel University. Relevant information about the survey is below.

The aim of this paper is to assign monetary value of unpaid work in Slovakia using data from the 2012 primary research and to figure out its contribution to GDP of Slovakia. The unpaid work was approached as an input to the domestic “production” and therefore valued in gross wages. To offer a complex image, both generalist as well as specialist wages were used as replacement costs.

The article is organized as follows: Section 2 summarizes the literature about the valuation of unpaid work, section 3 discusses most common methods used to value the unpaid work, together with data, section 4 presents results and then section 5 compares the results obtained and then concludes.

2. Literature

Closer look at the unpaid work of household is important as to the fact that all over the world people devote lots of time to perform the unpaid work. In some countries people spend even more time in unpaid work than on the workplace. For example, New Zealanders spent 4,129 million hours on unpaid work in 1999. This equates to an

average of 27.6 hours per week for all persons aged 15 and over, which is greater than the average 23.6 hours per week in paid employment (Tatau, 2001).

Significance of the unpaid work can be seen on the two levels: macroeconomic and microeconomic (Hronec et al., 2014.). From the macroeconomic perspective, examination of the unpaid work provide more accurate description of a national economy by including household production into traditional measures of economic status or progress—particularly measure of gross domestic product (GDP). For example, Miranda (2011) examined unpaid work in 29 countries (26 OECD members and 3 emerging economies). Her calculations suggests that between one-third and half of all valuable economic activity in the countries under consideration is not accounted for in the international measures of well-being, such as GDP per capita. On the other hand, from the microeconomic perspective, it also leads to better understanding of behaviour of economic subjects as it can affect various decisions of economic agents, gender equality as well as the well-being of families (Huňady et al., 2014). Because of these facts, the frequently overlooked topic of unpaid work is attracting attention in the field of international science during last decades. However, the opposite is true in the region of Slovakia, where the systematic research in these area is in its infancy. The phenomenon of unpaid work was examined mainly within social circumstance and consequences rather than economical mainly due to lack of proper data (Nedelova et al., 2014).

There are many reasons why to assign a monetary value to the time spend on unpaid work. Sousa-Poza et. al. (1999) argue that unpaid work generates wealth and contributes substantially to a society's welfare. From the methodology of national accounts it is obvious that the welfare contribution of unpaid work which falls outside the SNA production boundary remained unnoticed in the fundamental macroeconomic aggregates such as GDP. Household production, i.e. unpaid services produced for own consumption, is the most significant part of production which is excluded from the production boundary of national accounts (Varjonen et.al., 2014).

GDP estimates are commonly used to measure the economic performance of a whole country or region. But GDP excludes activities that are not provided through the market, such as household production and volunteer or unpaid services. Thus the GDP actually underestimates the whole production in the economy omitting household production by unpaid work. The sheer size of this production could be enormous in comparison with the other production in the economy. One way to highlight the contribution of unpaid work done by households to the overall production of the economy is its valuation in monetary terms.

There is an effort in many countries in the world to value it. Examples include Japan, where monetary value of unpaid work had been calculated for several years, namely 1981, 1986, 1991, 1996, 2001 and 2006 (Kuwahara, 2010, p.1). Sousa-Poza et. al. (1999) calculated unpaid labour in Switzerland using data from the 1997 Swiss Labour Force Survey. Kwon (2006) valued household work in Korea in years 1999 and 2004. Vaus et.al. (2003) estimated unpaid work for selected age cohorts in Australia, complex analyses of unpaid work in Australia in 1997 was done by Trewin (2000); Tatau (2001) estimated value of unpaid work in New Zealand in 1999. Estimation for European Union countries (namely EU24) was done by Giannelli et al. (2012). In spite of the fact that quite a lot of research work was done in this area the results are rarely comparable due to various methods of calculation. The researchers use various definition of unpaid work, include various activities and consider different approaches to evaluate it.

There is a study (Gianelli et al., 2012) in which calculation of value of unpaid work also in Slovakia as well as other EU24 countries was done. Hovewer it was carried out only for selected types of unpaid work (child care and domestic work) and the valuation was based not on data from the primary research done in Slovak households, rather on estimation of data from similar economies using econometric modelling. The aim of this paper is to assign monetary value of unpaid work in Slovakia using data from the 2012 primary research and to figure out its contribution to GDP of Slovakia.

3. Data and methodology

With view of the fact that there was not relevant source of information about the size and structure of the unpaid work in Slovakia, the issue is dealt with a primary survey through questionnaires within the research projects VEGA 1/1141/11 and VEGA 1/0935/13 conducted at the Faculty of Economics, Matej Bel University. In the paper there are analysed data from the latter. One of the aims of the project is to estimate the amount and structure of unpaid work in Slovak households. The information tool is a questionnaire with 12 modules. Seven modules were devoted to individuals and 5 modules to households. Individuals were asked to provide information about their:

- Socio-demographic situation
- Their paid job
- Time spent on average performing the unpaid work
- Usage of housework substitutes available at the market
- Opinion on the participation (help) of children in the unpaid housework
- Motivation for performing the unpaid work
- Type of housing, city size and region.

The main and the most interesting question was: "How many hours weekly do you and members of your family spend performing the following activities?" with the offer of 13 unpaid housework activities. The categories of unpaid household work used in the survey are outlined in Table 1.

The survey was implemented in April 2013 and it covered 2241 individuals in 861 households (the questionnaire collected data from 2012). The sample was representative by gender, number of household members and region.

Collected data were processed with the SPSS software (IBM SPSS 19). The representativeness was tested using the chi-squared goodness-of-fit test with the 0.05 significance level. For the computation of the weights for households was used R package "Sampling".

Table 1. The categories of unpaid household work in Slovakia

1	Food mangement, including also food preparation, baking and preserving, dish washing
2	Household upkeep, including cleaning dwelling and garden
3	Making and care of textiles, including laundry and ironing
4	Gardening - activities which are not done in connection with farming, e.g. tending ornamental plants.
5	Pet care - tending activities which are not done in connection with farming
6	Repairs of dwelling - Minor changes to the house, not belonging to SNA.
7	Shopping and services
8	Child care
9	Adult assistance care (except housework)
10	Voluntary works
11	Gardening - tending edible plants. Activities inside the SNA production boundary.
12	Tending domestic animals. Activities inside the SNA production boundary.
13	House construction and renovation - major changes, includes only activities inside the SNA production boundary.

Source: own processing.

The valuation of unpaid work is a subject of debate in the literature. Generally, two basic approaches to measuring unpaid work in monetary terms are identified: the "direct" or "output" method; and the "indirect" or "input" method. The output method is based on idea that the time used to providing the unpaid work is converted into outputs (for example, number of meals produced, number of clothes washed, rooms cleaned, etc.), and the value is computed using the relevant market prices (Vaus et. al., 2003, p. 8). This method is conceptually superior because it is the one that is used when calculating market production in national accounts (Varjonen et. al., 2014, p. 9). But too often the necessary data required for this method are not available. Therefore, the indirect or input method has been widely used.

Input methods are based on the idea of valuing output of the unpaid work in terms of the costs of inputs. These inputs include labour inputs and the use of physical capital (the land, dwellings and equipment owned by households). However, very often statistics about unpaid work provide only information about the amount of time

people devote to unpaid work and so the valuation methods do not take into account of the value of the physical capital used by households in non-market production. This is regarded as a weakness of this approach. Sousa-Poza et.al (1999) pointed out that one can therefore say that it is either a pure labour theory of value, or that it only values the time spent on unpaid work (and not the output as such). In the literature there are two broad approaches to the application of the input method (e.g. Vaus et. al., 2003; Sousa-Poza et.al, 1999; Trewin, 2000; Kuwahara, 2010):

- the market replacement cost approach – what it would cost households in wages to hire others to do the household and caring work for them. The method is based on the assumption that households save money by doing housework themselves instead of buying market goods and services or hiring someone else to perform the required tasks (Eurostat, 2003, p. 25).
- the opportunity cost approach – performs the valuation in terms of wages foregone (lost profit) as a result of opting not to offer services in the market. This method is based on assumption that the time spent on unpaid work reduces the time spent on paid work. Therefore time spent on unpaid work is a cost and the valuing method is called the opportunity cost method (based on Becker's model 1965, quoted in Eurostat, 2003, p. 25)

When one decides to apply the market replacement cost method, the monetary valuation of unpaid work heavily depends on data about the amount of time devoted to unpaid work as well as on wages used. And thus it raises the important question: whose wages should be used. The first option is to use the wages of specialised workers in market enterprises, while the second is to use the wage rate of generalist (i.e., an all-rounder).

From the above-described there are two variants of the replacement cost method depending on wage used. Replacement cost can be based on generalist's or specialist's wages (Sousa-Poza et.al, 1999; Kuwahara, 2010).

The monetary value of unpaid work then can be calculated using both methods as follows:

Where $$\sum_{i=1}^{N}\sum_{j=1}^{M} X_i \cdot H_{ij} \cdot W_j \cdot 52 \qquad (1)$$

N – is the size of the sample,
M – number of activities (groups of activities),
Xi – extrapolation factor (weights used to generalize the value of the sample),
Hij – number of hours spent on unpaid work from the group of activities j per one week, corresponding to individuals in the household i,
Wj – hourly wage of specialized occupations in the group j.

When calculating output using generalist's wages M =1; on the other hand when using specialist's wages, M corresponds to the number of specified kind of activities.

Some complications are identified in the literature when the market replacement cost methods is used to calculate the monetary value of unpaid work. Trewin (2000, p. 24) points out that: „Use of this method is based on the key assumption that household members and market replacements are equally productive in their work activities". It does not need always to be the case. So the result could be underestimation or overestimation of the value on unpaid work depending on the differences in the productivity.

Second complication is connected with the wage concept. Sousa-Poza et.al. (1999, p. 6) claim: "the problem with the market replacement cost methods is that the choice of an appropriate market substitute, and this substitute's corresponding wage rate is very subjective". Another problem connected with the wage concept is whether it is more appropriate to use gross or net wages. Eurostat (2003) has the following to say about the choice between gross and net wages. "If households were to buy the service from the market, they would have to pay the gross wage. However, if it is thought that households earn the money by producing the services themselves, then the net wage would obviously be more appropriate because the household would not have to pay taxes or social security contributions for themselves. The choice depends again on the purpose of the analysis. If the purpose of the analysis

is to describe "expenses forgone" gross wages should be used. When households buy products from the market the price includes all labour cost." As this study is based on „third party" definition of the unpaid work, the „expense forgone logic seem to be more consistent.

4. Results

Based on the data available from the primary research in Slovakia, the monetary value of unpaid work in Slovakia in this paper is calculated exactly by valuating output of the unpaid work in terms of the costs of the only input – labour. Both approaches of the market replacement cost methods – generalist and specialist are applied. Gross wages were used. The appropriate wages were chosen from the report of Slovak Statistical Office Structure of the Earnings in the SR which provides average wages for individual categories of occupations. The chosen categories are outlined in Table 2.

Table 2. Average gross monthly earnings in SR in 2012 by occupations

Method	SK ISCO-08 code	Occupation	Average of SR
Specialist method	5120	Cooks	452
	9112	Cleaners, helpers in offices, hotels, oth. est.	376
	8157	Laundry machine operators	470
	6114	Mixed crop growers	586
	6129	Animal producers n. e. c.	580
	9622	Odd job persons	469
	5221	Shop keepers	551
	5311	Child care workers	510
	5322	Home-based personal care workers	323
	6111	Field crop and vegetable growers	526
	6121	Livestock and diary producers	631
	7111	House builders	773
		Volunteers	505
Generalist method	9111	Domestic cleaners and helpers	388

Source: ŠU SR, 2012

In order to bring complex picture of the monetary value of unpaid work in Slovakia, valuation was done not only for non-SNA activities, but also for all activities mentioned in Table 1. This is based on the idea that SNA production activities are „theoretically included in the estimation of GDP although, in practice, they may be underestimated owing to lack of data." (UN, 2005, p. 197). For the evaluation of unpaid work in Slovak households formula (1) was used. Using specialist method 13 housework activities were considered (M=13) while in the generalist method M=1. Housework of individuals over 14 years is taken into account and time devoted to unpaid work in households was acquired from questionnaire survey. In the specialist method, average monthly wages (2012) of selected categories of occupations were used for the evaluation of the individual housework activities. Generalist method uses the average monthly wage of domestic cleaners and helpers (see Table 2). Table 3 presents the results.

Table 3. Monetary valuation of unpaid work in Slovakia in 2012

Method	Vaule in	
	mill. EUR	% of GDP
Market replacement cost method - Generalist		
including activities inside SNA production boundary	14 639	20.28
only activities outside SNA production boudary	13 159	18.23
Market replacement cost method - Specialist		
including activities inside SNA production boundary	18 148	25.14
only activities outside SNA production boudary	15 773	21.85

Source: own calculation

For detail understanding, how the wages affects the monetary value of non-SNA categories of unpaid work figured out by specialist method, we decomposed unpaid work into individual activities and express their contribution to the volume of unpaid work in terms of time units and in terms of monetary value. The results are shown in Table 4:

Table 4. Contribution of individual activities to the total volume of unpaid work in Slovakia

	Food management	Household upkeep	Care for textiles	Gardening	Pet care
% of total time	21,7%	17,1%	6,8%	6,0%	6,3%
% of monetary value	21,1%	13,8%	5,8%	5,8%	8,1%

	Repairs	Shopping and services	Childcare	Adult assistance care	Voluntary works
% of total time	3,6%	14,0%	19,2%	4,4%	1,0%
% of monetary value	3,6%	16,6%	21,0%	3,1%	1,1%

Source: own calculation

It is obvious from the table, that there are activities within unpaid work which contributes to the total time of unpaid work in higher extent than to its value in monetary terms. The difference is most significant for the household upkeep and care for an adult member of the family. The phenomenon is an inevitable consequence of the fact that market wages do not reflect difficulty and contribution of the activity to the social welfare but mainly the conditions on the market.

5. Summary and Conclusion

The presented results could be compared with the international measurements only partially, as there are only few studies which figures out the monetary value of unpaid work. In addition, the studies differ more or less in the methodologies used. In spite of this fact, the heterogeneity of the results points out on some problems connected to measuring the monetary value of unpaid work.

The approach to valuation of unpaid work used in this paper is based on gross wages as replacement costs and on complex definition of unpaid work including both SNA and non-SNA items. Therefore, it can be expected, the value of unpaid work will be slightly higher as values obtained by other researches or at least belonging to upper part of the interval. However, the opposite is true.

Huňady and Orviská (2012) based on the study of The World's Women 2010 – Trends and Statistics show that the differences between volumes of unpaid work in developed countries are not high. The total time spent a day by domestic work ranges from 4:01 to 5:29 for women and 1:17 to 3:11 for men. The average in developed countries is 4:49 for women and 2:23 for men. The numbers for Slovakia is close to the average 4:41 for women and 2:43 for men.

The monetary value of unpaid work expressed as a percentage of GDP shows higher variability. Sousa-Poza et al. (1999) quantifies monetary value of unpaid work in Switzerland using similar method as used in this paper. He obtained the values 41,1% of GDP for generalist method and 52,3% of GDP for specialist method. He also summarised the results obtained by various researchers until the year 1999. The monetary value ranges from 38% of GDP for Norway to 82% of GDP for Holland using generalist method and from 37% of GDP for Norway to 72% of GDP for Germany using specialist method.

Tatau (2001) compares the monetary value of unpaid work for Australia, New Zeland, Canada, Finland and Great Britain using generalist method. The values lie in the interval from 34% of GDP for Canada to 45% of GDP for Finland.

More current results are presented by Ahmad and Koh (2011), who however used net wages to calculate the value of unpaid work. They figure out the monetary value of unpaid work from 22% of GDP for Poland and Canada to 51% of GDP for Portugal.

Despite various approaches used, it is clear that the monetary value of unpaid work expressed as a percentage of GDP in Slovakia reaches the lower boundary drafted by international comparisons. It is clear, that the reason is not in significantly lower time devoted to unpaid work, but in lower wages in the national economy. It is not surprising that wages in Slovakia are substantially lower for market substitutes to unpaid work in comparison to traditionally market economies since they are rarely used by Slovak households. Noteworthy reason of this phenomenon is traditional position of domestic work within Slovak culture. The significance of traditionalism is stressed also by Kika and Martinkovičová (2014) who points out that the process of removal of tradition seem to weaker in the area of domestic work.

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